

REMARKS

Claims 1-14, 16, and 17 are pending in this application. Reconsideration and withdrawal of the rejections set forth in the Official Action are respectfully requested in view of this amendment and the following reasons. Claims 1, 14, and 16 have been amended.

Claims 1, 14, and 16 have been amended to recite the claimed subject matter more clearly. Support for the amendment to these claims is found in the present application as originally filed, particularly, at least on page 5, lines 21-28 and page 18, lines 1-13.

It is respectfully submitted that the above amendments introduce no new matter within the meaning of 35 U.S.C. §132. Entry of the Amendment is proper under 37 C.F.R. §1.116 because it (a) places the application in *prima facie* condition for allowance for the reasons discussed herein; (b) does not raise new issues requiring further search and/or consideration by the Examiner because similar subject matter was previously considered by the Examiner and thus further consideration and/or search by the Examiner is not warranted; and (c) places the application in better form for appeal, should an appeal be necessary. For at least these reasons, entry of the present Amendment is therefore respectfully requested. Accordingly, Applicant requests reconsideration and timely withdrawal of the pending rejections for the reasons discussed below.

Interview Summary

Applicant acknowledges the in-person interview of November 24, 2009, in which it was suggested by the Examiner that claim 14 be added more definition of "anchors" in view

of U.S. Patent No. 6,597,812 to Fallon, *et al.* Applicant requests that all outstanding rejections be withdrawn in view of the amendments presented herewith.

Overview

According to the presently claimed subject matter, the need in providing a dictionary that represents words (data) is eliminated. Instead, a table with anchors and data blocks, in which they were found, is provided. It should be noted that the compression occurs inside each data block, and it may be performed by any (compression) algorithm. *The data is partitioned into blocks, and each block is stored and referenced separately.* This allows deleting blocks by different techniques, such as deleting the last recently used block (LRU block) rather than the oldest block. Also, the presently claimed subject matter *suggests aggregating each session into blocks, where the end of the block is determined by an anchor* (thus, performing data synchronization) or by a maximum size. Thus, no outer-fragmentation is performed. According to the presently claimed subject matter, *an anchor is a technique to synchronize a stream of numbers without using metadata* (e.g., without placing indications within the data string showing wherein the data begins) (see page 13, lines 25 to page 14, line 2; page 14, line 25 to page 15, line 11; page 8, lines 23-31; page 19, line 16 to page 20, line 17; etc.).

Rejections Under 35 U.S.C. §102

Claim 14 stands rejected under 35 U.S.C. §102(b) as being anticipated by U.S.

Patent No. 6,597,812 issued to Fallon, *et al.* ("Fallon").

"Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." *W.L. Gore & Assocs. V. Garlock*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Further, "when evaluating the scope of a claim, every limitation in the claim must be considered. U.S.P.T.O. personnel may not dissect a claimed invention into discrete elements and then evaluate the elements in isolation. Instead, the claim as a whole must be considered." See *MPEP 2106 II (C)*.

Claim 14, as amended, recites, *inter alia*:

determining reference points in the data stream being locations in the data stream where a predefined number of characters fulfill a predetermined criterion, said reference points being determined without using metadata and without prior placing of indications within the data stream showing wherein the data begins, the reference points being determined *based on a probability of returning one anchor per data range of a predetermined size* (emphasis added)

Fallon presents systems and methods for providing lossless data *compression and decompression*. Fallon exploits characteristics of *run-length encoding, parametric dictionary encoding, and bit packing to comprise an encoding/decoding process* having an efficiency that is suitable for use in real-time lossless data compression and

decompression applications (see Col. 3, lines 5-11; and Col. 4, line 64 to Col. 5, line 65). However, Fallon is concerned with providing a compression server that uses *three conventional compression techniques*: Run-Length-Encoding (RLE), Huffman encoding and a technique for replacing strings with a shorter encoding (a variation of conventional Lempel-Ziv encoding); RLE encoding is a technique to replace a string, consisting of a repeating single character, with two symbols where the first symbol describes the repeating letter, and the second symbol describes a number of times this letter is repeated. Moreover, Fallon does not teach implementing a technique of the presently claimed subject matter for using anchors *to synchronize a data stream without using metadata and without placing indications within the data string showing wherein the data begins*. Furthermore, the compressor of Fallon *needs to keep the same dictionary as the decompressor* (Col. 5, line 66 to Col. 6, line 63). This is contradictory to the presently claimed subject matter, according to which *the need in providing a dictionary that represents words (data) is eliminated, and instead, a table with anchors and data blocks in which they were found, is provided, as already mentioned above* (see, e.g., page 16 , lines 5-20).

It should be noted that usually, the data in the blocks is significantly larger than the server memory, and therefore it must be stored locally within a data storage unit (e.g., a memory disk). Also, the data in the blocks is usually significantly larger (e.g., more than thousand times) than a conventional data storage unit size, and thus, it is *unfeasible to prestore (prior to receiving the packets from the remote sender) all block data within the data storage unit (e.g., creating a dictionary)* for further replacing the received packets with

said blocks, according to a digital signature that is a function of data contained in said blocks. *Thus, keeping a dictionary of the data in the blocks (as taught by Fallon, according to which a dictionary comprising a plurality of code words, wherein each code word is associated with a unique data block string) will result in obtaining a too large data structure. On the other hand, using a hash-table will result in obtaining a data structure, whose probability to find corresponding pieces of data (blocks) that match a received packet will be too low.*

Applicant submits that Fallon fails to teach at least such claim feature recited above. Rather, as suggested in the Official Action, Fallon simply detects “[i]f there are at least s consecutively similar characters in the input stream (affirmative determination in step 205)” (Office Action, page 2, lines 21-22). This implies that the locations of the character group, consisting of at least s consecutively similar characters, can only be determined by the actual occurrences of the s-consecutive characters in the input stream. Thus, in Fallon, it is clear that the locations of the s-consecutive characters in the input stream are not determined by any probability of returning. Accordingly, Fallon does not teach at least “the reference points being determined based on a probability of returning one anchor per data range of a predetermined size,” as recited in claim 14.

In contrast to the Fallon teachings, according to an embodiment of the presently claimed subject matter, a function for determining anchors per data range of a satisfactory size, e.g. a function according which an anchor can be expected once per about 50K of data (see present application, page 5, lines 21-28). Also, the expected number of anchors

in a packet can be three. This means that there is a certain probability that some anchor will be found (see present application, page 18, lines 6-9).

Therefore, Fallon fails to teach at least “the reference points being determined based on a probability of returning one anchor per data range of a predetermined size,” as recited in claim 14. Since Fallon fails to disclose each and every feature recited in claim 14, Applicant respectfully submits that the reference does not anticipate the claim.

In addition to the above reason, claim 14 is allowable over Fallon in view of the following:

Claim 14, as amended, recites, *inter alia*:

registering a digital signature being a value returned from a predetermined function taken over a predefined range of content, the predefined range of content is ***in correlation with said reference points*** (emphasis added)

The Official Action concludes that this claim feature is taught by Fallon, Col. 9, line 1 and step 212. Applicant respectfully disagrees with this conclusion because this rejection results from an evaluation of dissected claim elements in isolation, rather than from a consideration of the elements as a whole. The Official Action asserts that the “reference points” recited in claim 14 are explicitly or inherently taught by the “s consecutively similar characters” described in Fallon, Col. 8, line 28 and step 205. However, the Official Action at the same time alleges that the “predefined range of content is in correlation with said reference points,” recited above, is taught by Fallon, Col. 9, line 1 and step 212. Applicant

respectfully notes that these two allegations cannot be true at the same time. According to the Examiner's evaluation, in order for Fallon to teach the "reference points" of claim 14, there must be "at least s consecutive matching input bytes for run length encoding" (i.e., in step 205, "Yes"). However, step 212 is performed only if there is no "at least s consecutive matching input bytes for run length encoding," and thus cannot be applied if any "reference points" are detected. Thus, it is clear that Fallon fails to teach that "the predefined range of content is in correlation with said reference points," as recited in claim 14.

Furthermore, assuming *arguendo* the Fallon system *inherently* teaches that data are inserted into data stream after the dictionary has been accessed and any predefined range of the decompressed stream must correlate to the compressed stream to reinsert the data, as discussed in the interview, this Fallon system does not anticipate that "the predefined range of content is *in correlation with said reference points*" (emphasis added), because no correlation exists between the above functions and the "s consecutively similar characters" described in Fallon, Col. 8, line 28 and step 205. In other words, the inherent functions of the Fallon system that "data are inserted into data stream after the dictionary has been accessed and any predefined range of the decompressed stream must correlate to the compressed stream to reinsert the data" will be implemented regardless of whether the "s consecutively similar characters," which the Examiner believes teaches the "reference points" of claim 14, are detected or not: simply, the former is independent from the latter. Thus, Fallon fails to teach that "the predefined range of content is in correlation with said reference points," as recited in claim 14.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. §102(b) rejection of claim 14. Since none of the other prior art of record discloses or suggests all the features of the claimed subject matter, Applicant respectfully submits that claim 14 is allowable.

Rejections Under 35 U.S.C. §103

1. Claims 1, 4-6, 7-13, and 16 stand rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Fallon in view of U.S. Patent No. 7,460,534 issued to Bellenger ("Bellenger").

Bellenger presents a method for switching packets on a network. The method of Bellenger includes computing a tag for the packet. The tag can be generated by masking portions of the packet and using the selected portions of the packet as the seed to a pseudorandom number generator. The tag can then be looked up in a table, which can be a cache of entries with one entry for each active flow. In turn, the entry is indexed by the tag. Each entry associates switching information with a tag, and the switching information can be used to switch the packet. However, Bellenger does not provide any guidance as to how to achieve the specific form of the claimed combination (*In re Kubin*, 561 F.3d 1351, 90 U.S.P.Q.2d 1417 (Fed. Cir. 2009)). Therefore, Bellenger cannot render the amended claims 1, 2-6, and 7-16 obvious.

Applicant respectfully submits that claims 1 and 16 are directed to a communication

server and a system, respectively, reciting the feature, "the reference points being determined based on a probability of returning one anchor per data range of a predetermined size," as recited in claim 14. Bellenger fails to cure the deficiencies of Fallon noted above with regard to claim 14. Bellenger is cited by the Examiner in an attempt to teach the feature of claims 1 and 16, "substantially identical pieces of data," but fails to teach "the reference points being determined based on a probability of returning one anchor per data range of a predetermined size," as recited in claim 14. Thus, even if one of ordinary skill in the art happens to combine the teachings of Fallon and Bellenger, the combined references still do not teach that feature of claims 1 and 16. Accordingly, claims 1 and 16 are allowable over Fallon and Bellenger, whether taken alone or in combination.

Claims 4-6 and 7-13 depend directly or indirectly from claim 1, and thus are allowable for at least this reason.

2. Claims 2 and 3 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Fallon in view of Bellenger, and in further view of U.S. Patent No. 6,076,084 issued to Harlan ("Harlan").

Harlan facilitates the transmission of a file to a computer where the receiving computer has a file (called the old file) that is related to the file being transmitted (called the new file), but where the sending computer does not know the status or content of the old file. According to Harlan, one of the computers generates a Delimiter Selection Profile

Table (DSPT). Either the receiving computer generates a DSPT of the old file or the sending computer generates a DSPT of the new file. Next, using the information in the DSPT, one of the delimiters is chosen as the delimiter, which will be used and this delimiter is transmitted to the computer, which did not generate the DSPT. The receiving computer next generates a Segment Profile (SPT) of the old file and the sending computer generates an SPT the new file. The SPT is generated by calculating a hash code (such as a CRC) for each segment which is defined by the selected delimiter. However, similarly to Bellenger, Harlan does not provide any guidance as to how to achieve the specific form of the claimed combination (*In re Kubin*, 561 F.3d 1351, 90 U.S.P.Q.2d 1417 (Fed. Cir. 2009)). Therefore, Harlan cannot render the amended claims 2, 3 and 17 obvious.

Applicant respectfully submits that claims 2 and 3 depend directly or indirectly from claim 1. Harlan fails to cure the deficiencies of Fallon and Bellenger noted above with regard to claim 1. Harlan is cited by the Examiner in an attempt to teach the additional feature of claims 2 and 3, but fails to teach "the reference points being determined based on a probability of returning one anchor per data range of a predetermined size," as recited in claim 1. Thus, even if one of ordinary skill in the art happens to combine the teachings of Fallon, Bellenger, and Harlan, the combined references still do not teach that feature of claim 1. Accordingly, claims 2 and 3 are allowable over Fallon, Bellenger, and Harlan because they depend from claim 1.

3. Claim 17 stands rejected under 35 U.S.C. §103(a) as being unpatentable over

Fallon in view of Harlan.

Applicant respectfully submits that claim 17 depends from claim 14. Harlan fails to cure the deficiencies of Fallon noted above with regard to claim 14. Harlan is cited by the Examiner in an attempt to teach the additional feature of claims 2 and 3, but fails to teach “the reference points being determined based on a probability of returning one anchor per data range of a predetermined size,” as recited in claim 14. Thus, even if one of ordinary skill in the art happens to combine the teachings of Fallon and Harlan, the combined references still do not teach that feature of claim 14. Accordingly, claim 17 is allowable over Fallon and Harlan because it depends from claim 14.

Accordingly, Applicant respectfully requests withdrawal of the 35 U.S.C. §103(a) rejection of claims 1-13, 16, and 17. Since none of the other prior art of record, whether taken alone or in any combination, discloses or suggests all the features of the claimed subject matter, Applicant respectfully submits that independent claims 1 and 16, and all the claims that depend therefrom, are allowable.

CONCLUSION

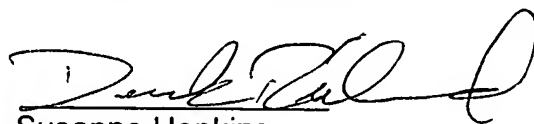
Applicant believes that a full and complete response has been made to the pending Office Action and respectfully submits that all of the stated grounds for rejection have been overcome or rendered moot. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative at the number below to expedite prosecution.

If an extension of time is necessary to prevent abandonment of this application and is not filed herewith, then such extension of time is hereby petitioned for under 37 C.F.R. §1.136(a). Any fees required for further extensions of time and any fees for the net addition of claims are hereby authorized to be charged to our Deposit Account No. 14-0112. Prompt and favorable consideration of this Reply is respectfully requested.

Respectfully submitted,
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